

WHAT IS CLAIMED IS:

- Sub
A1
1. A composition of matter comprising:
a positively charged porous matrix; and
a urea derivative dye on at least one surface of said matrix.
2. The composition according to Claim 1, wherein said positively charged porous matrix comprises nylon.
- 10 3. The composition according to Claim 1, wherein said urea derivative dye is a negatively charged urea derivative dye.
4. The composition according to Claim 1, wherein said urea derivative dye
15 has the formula:
 $R^1R^2NCONHR^3$, wherein R^1 , R^2 taken together is a N, N-di-substituted aminoaryl and R^3 is selected from the group consisting of carboxyalkyl, alkoxycarbonyl, alkylcarbonyl, arylsulfonyl, sulfoaryl and carboxyaryl.
- 20 5. The composition according to Claim 4, wherein said urea derivative dye is selected from group consisting of phenothiazine derivative dyes, phenoxazine derivative dyes and diphenylamine derivative dyes.
- 25 6. The composition according to Claim 1, wherein urea derivative dye is a member of a peroxide producing signal producing system present on said matrix.
7. The composition according to Claim 6, wherein said composition further comprises at least one additional reagent member of a peroxide producing signal
30 producing system.

8. The composition according to Claim 7, wherein said at least one additional reagent member is an analyte oxidase.

5 9. The composition according to Claim 7, wherein said at least one additional reagent member is a peroxidase.

10. The composition according to Claim 9, wherein said peroxidase is horseradish peroxidase.

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Subt A2
11. A reagent test strip for use in detecting the presence or determining the concentration of an analyte in a physiological sample, said strip comprising:
a positively charged porous matrix; and
a peroxide producing signal producing system present on said matrix, wherein said
15 peroxide producing signal producing system includes a urea derivative dye.

12. The test strip according to Claim 11, wherein said positively charged porous matrix comprises nylon.

20 13. The test strip according to Claim 11, wherein said urea derivative dye is negatively charged.

Subt A3
14. The test strip according to Claim 11, wherein said urea derivative dye has the formula:

25 $R^1R^2NCONHR^3$, wherein R^1 , R^2 taken together is a N, N-di-substituted aminoaryl, and R^3 is selected from the group consisting of carboxyalkyl, alkoxycarbonyl, alkylcarbonyl, arylsulfonyl, sulfoaryl and carboxyaryl

15. The test strip according to Claim 14, wherein said urea derivative dye is
30 10-(carboxymethylaminocarbonyl)-3,7-bis(dimethylamino)phenothiazine or a salt thereof.

16. The test strip according to Claim 11, wherein said peroxide producing signal producing system comprises an analyte oxidase.

5 17. The test strip according to Claim 11, wherein said peroxide producing signal producing system comprises a peroxidase.

18. The test strip according to Claim 17, wherein said peroxidase is horseradish peroxidase.

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19. An analyte detection or measurement system comprising:

(a) a reagent test strip comprising:

(i) a positively charged porous matrix; and

(ii) a peroxide producing signal producing system present on said

15 matrix, wherein said peroxide producing signal producing system includes a urea derivative dye; and

(b) an automated instrument.

20 20. A method for detecting the presence or determining the concentration of an analyte in a sample, said method comprising:

(a) applying said physiological sample to a reagent test strip comprising:

(i) a positively charged porous matrix; and

(ii) a peroxide producing signal producing system present on said

25 matrix, wherein said peroxide producing signal producing system includes a urea derivative dye;

(b) detecting a signal produced by said signal producing system; and

(c) relating said detected signal to the presence or concentration of said analyte in said physiological sample.

21. The method according to Claim 20, wherein said analyte is selected from the group consisting of glucose, cholesterol, alcohol, formaldehyde, L-glutamic acid, glycerol, galactose, glycated proteins, creatinine, ketone body, ascorbic acid, lactic acid, leucine, malic acid, pyruvic acid and uric acid.

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22. The method according to Claim 20, wherein said sample is whole blood or a derivative thereof.

23. The method according to Claim 20, wherein said detecting and relating
10 steps are carried out by an automated instrument.

Sub A5
24. A kit for use in determining the concentration of an analyte in a physiological sample, said kit comprising:

(a) a reagent test strip comprising:

(i) a positively charged porous matrix; and

(ii) a peroxide producing signal producing system present on said matrix, wherein said peroxide producing signal producing system includes a urea derivative dye; and

(b) at least one of:

(i) a means for obtaining said physiological sample and

(ii) an analyte standard.

25. The kit according to Claim 24, wherein said means for obtaining said physiological sample is a lance.

26. The kit according to Claim 24, wherein said analyte standard comprises a standardized concentration of a known reagent.

27. The kit according to Claim 24, wherein said kit comprises a means for
30 obtaining said physiological sample and an analyte standard.